

I Claim:

1. A printing device to transfer ink onto a recording medium, comprising:
a carrier;
a plurality of print elements arranged on said carrier in at least one linear row, each print
element having two high-voltage electrodes; and
5 a high-voltage supply connected to said high-voltage electrodes to selectively supply a high
voltage to at least one print element so that a spark discharge ensues whose shock
impulse transfers ink from said carrier onto the recording medium.

- 10 2. A printing device according to claim 1, wherein said two high-voltage
electrodes of each print element include first electrodes of a first polarity and second
electrodes of a second polarity, said first electrodes of said first polarity of a row of said print
elements being electrically connected with one another; and
said second electrodes being selectively triggered with high voltage.

- 15 3. A printing device according to claim 1, wherein said two high-voltage
electrodes of said print elements includes a first electrode shaped as a ring electrode.

4. A printing device according to claim 1, wherein said two high-voltage
electrodes of said print elements includes a first electrode shaped as a circular area.
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5. A printing device according to claim 1, wherein said carrier defines at least
one cup-like pit adapted to accept ink for each of said print elements.

6. A printing device according to claim 5, wherein said at least one cup-like pit has a diameter in the range of 10 to 50 μm .

7. A printing device according to claim 5, wherein said at least one cup-like pit has a depth of 0.1 to 50 μm .

5 8. A printing device according to claim 1, wherein said at least one linear row of print elements includes a plurality of rows of print elements arranged in a matrix.

10 9. A printing device according to claim 8, wherein said two high-voltage electrodes of each print element include first electrodes of a first polarity and second electrodes of a second polarity, said first electrodes of said first polarity of a row of said print elements of said matrix being electrically connected with one another; said second electrodes of said print elements of columns of said matrix being electrically connected with one another; and

15 given application of a high voltage at a selected row and a selected column of said matrix, a spark discharge is released at a print element located at a cross-over of said selected row and said selected column.

20 10. A printing device according to claim 8, wherein separation of said print elements from one another in said matrix is determined dependent on a desired print resolution.

11. A printing device according to claim 8, wherein said print elements of said matrix are spaced from one another at intervals of approximately 42.33 µm.

12. A printing device according to claim 1, wherein said carrier is a flat plate.

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13. A printing device according to claim 1, wherein said carrier is a print roller.

14. A method to transfer ink onto a recording medium, comprising the steps of:

providing a plurality of print elements on a carrier in at least one linear row;

10 providing each print element with two high-voltage electrodes;

applying ink to a surface of said carrier; and

selectively supplying high voltage to at least one of said print elements so that a spark

discharge is released whose shock impulse transfers ink from said carrier onto the

recording medium.

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15. A method according to claim 14, further comprising the step of:

providing at least one cup-like pit in said carrier per print element in which ink can be

accepted.

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16. A method according to claim 15, wherein said cup-like pit has a diameter in a range of 10 to 50 µm.

17. A method according to claim 15, wherein said cup-like pit has a depth in a

range of 0.1 to 50 µm.

18. A method according to claim 14, wherein said plurality of print elements are disposed in a plurality of rows arranged in a matrix.

5 19. A method according to claim 18, further comprising the steps of:
electrically connecting said high-voltage electrodes of a first polarity in said print elements of
a row with one another;
electrically connecting said high-voltage electrodes of a second polarity in said print elements
of a column with one another; and
10 applying a high voltage at a selected row and at a selected column so that a spark discharge is
released at a print element located at a cross-over of said selected row and said
selected column.

15 20. A method according to claim 18, wherein said print elements of said matrix
are spaced from one another at intervals of approximately 42.3 µm.

21. A method according to claim 14, wherein said carrier is a flat plate.

22. A method according to claim 14, wherein said carrier is a print roller.

20 23. A method according to claim 14, further comprising the step of:
inking a surface of said carrier by color values.

24. A method according to claim 14, further comprising the step of:
transferring the ink into an intermediate carrier before transferring the ink from the
intermediate carrier onto the recording medium.